

# An “Information Ecosystem” to meet the data management requirements of the Long-term Agroecosystem Research (LTAR) Network

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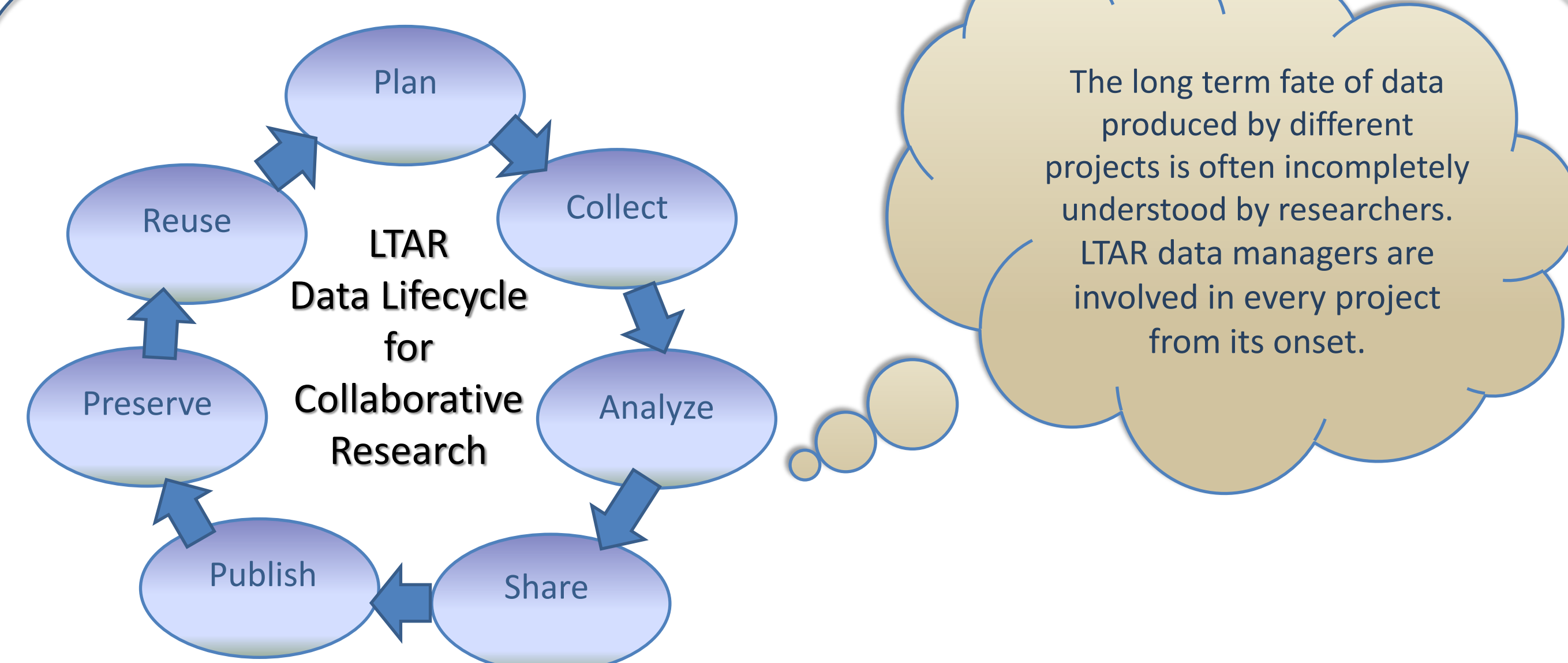
## Background

USDA’s Long-Term Agroecosystem Research (LTAR) Network coordinates research to understand and advance the sustainability of US agriculture. Local experimentation and monitoring are aggregated into regional and national findings. As the network of 18 sites works to design and develop its data management (DM) systems, an LTAR “Information Ecosystem” (Nardi and O’Day, 1999) is envisioned to enable effective communication and collaboration, data sharing policies and strategies, standardization of exchange formats for data and metadata, integration of various types of data, and data quality inspection (e.g. QAQC).

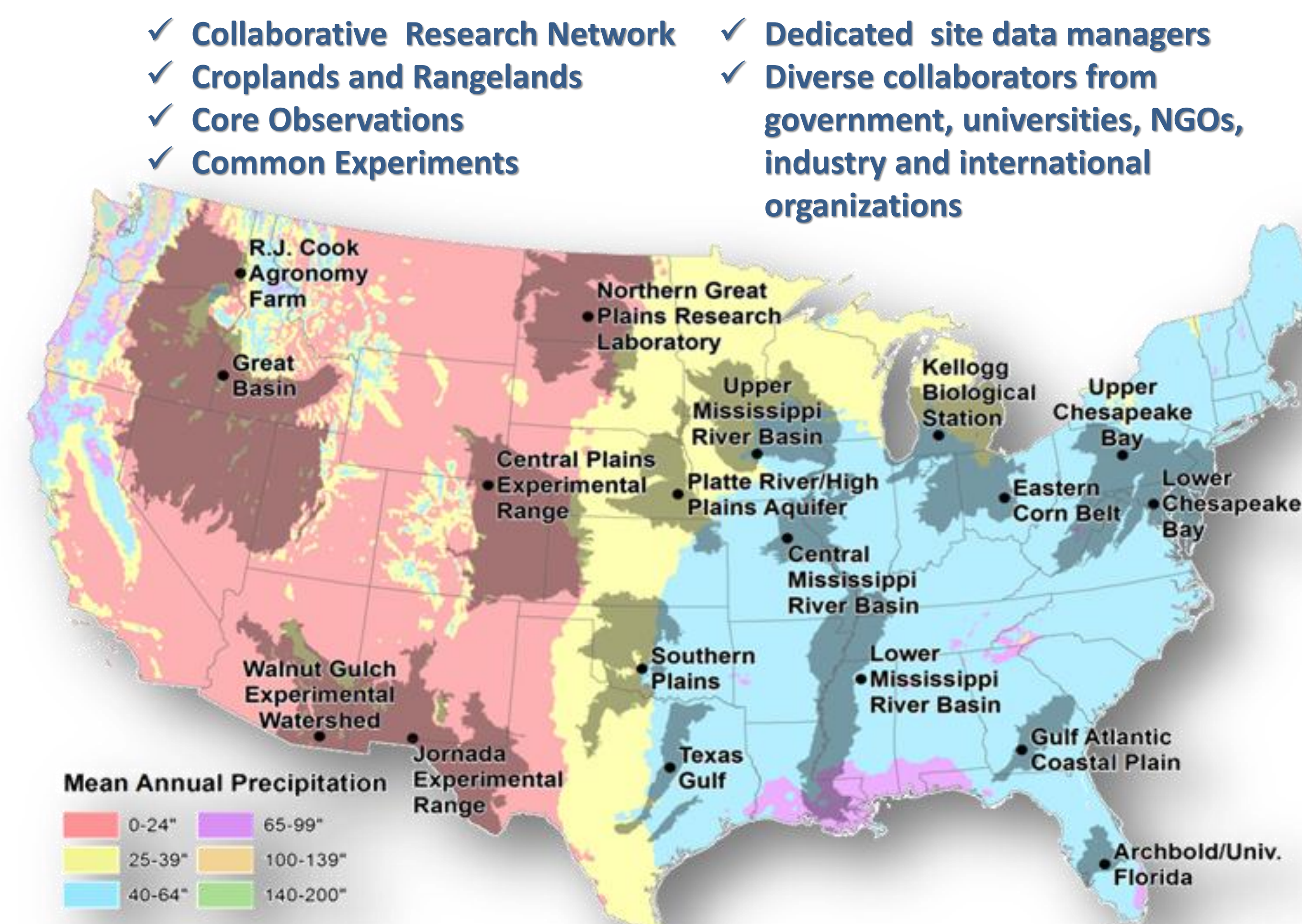
## An “Information Ecosystem”

Scaling up from local data management systems to a “a system of people, data, practices, technologies, and values in a *Network* environment.”

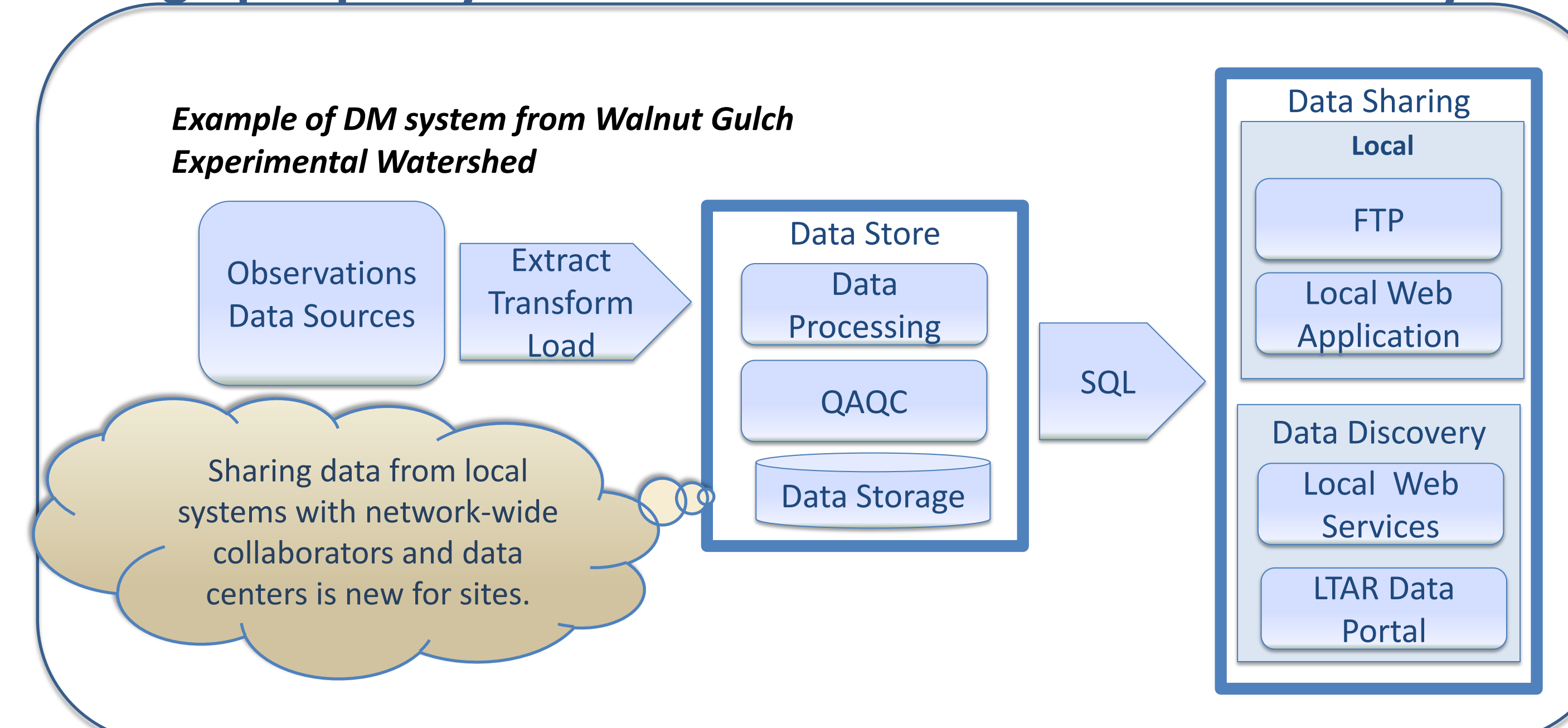
## Embedding the data life cycle within the research process by dedicating data managers to science working groups



## LTAR Network mission: enable understanding and forecasting of regional landscape capacities to provide sustainable agricultural production & ecosystem services under changing conditions.

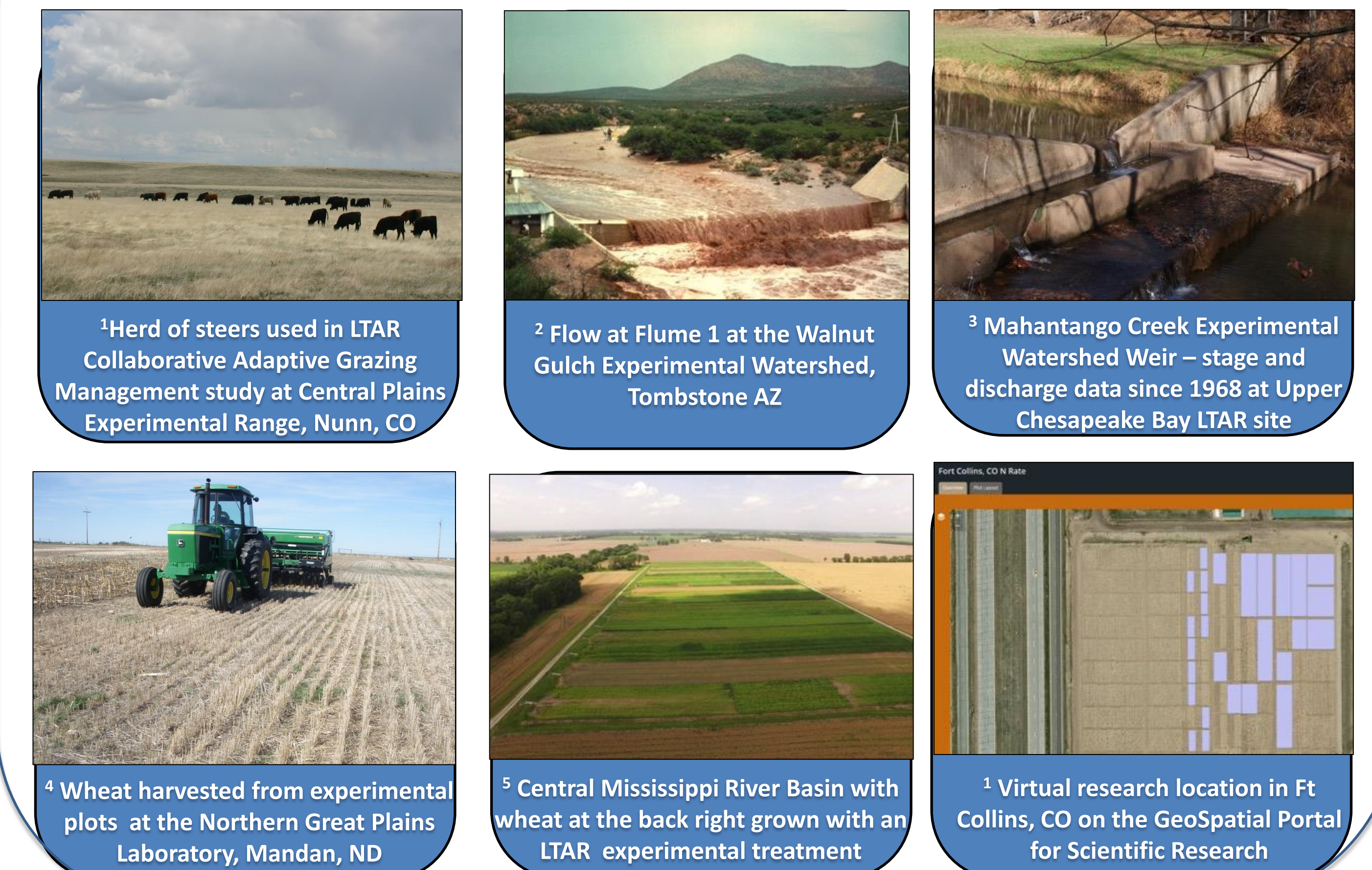


## Designing and implementing local DM systems at each site and scaling up capacity to contribute to the “Information Ecosystem”

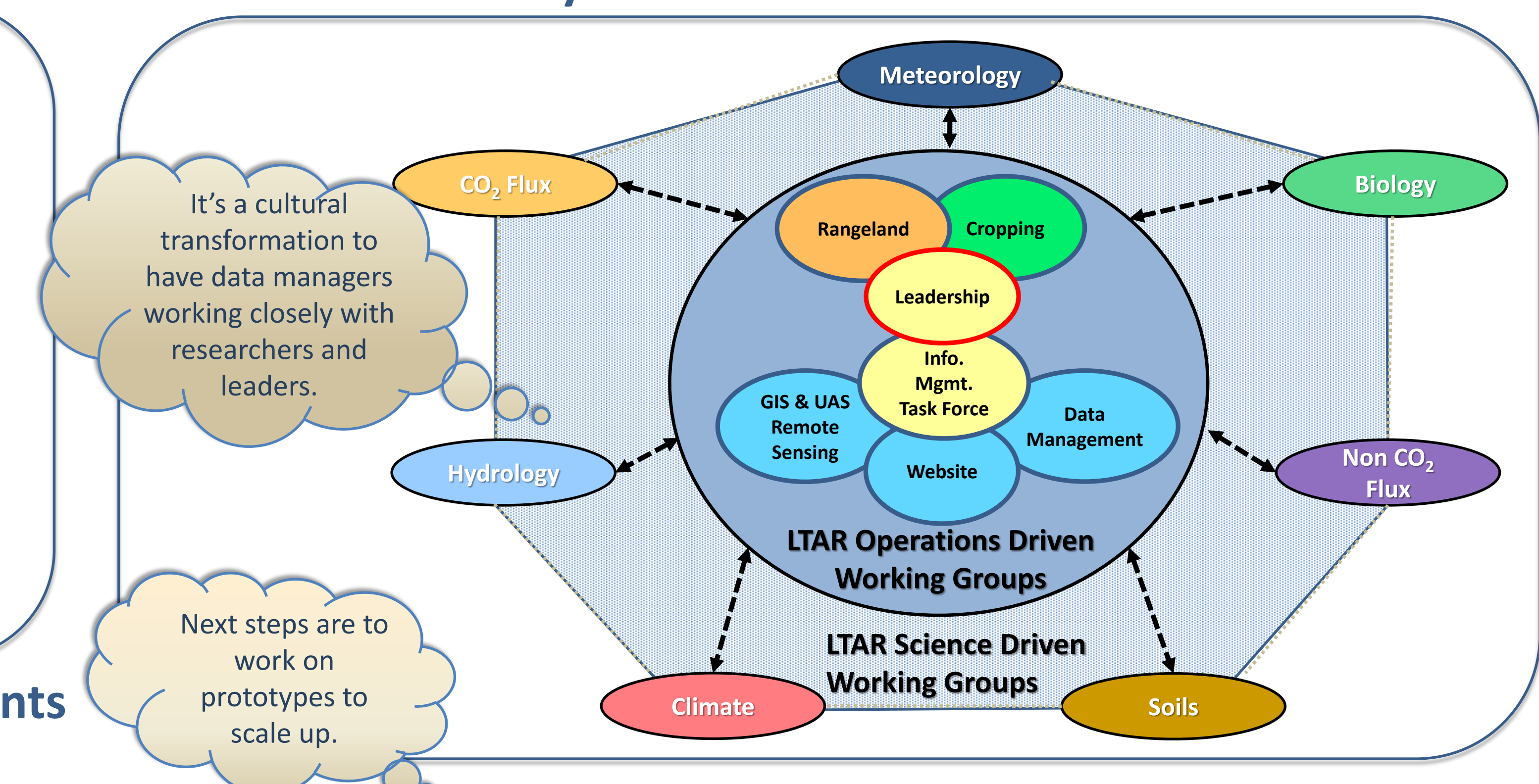


## Co-authors

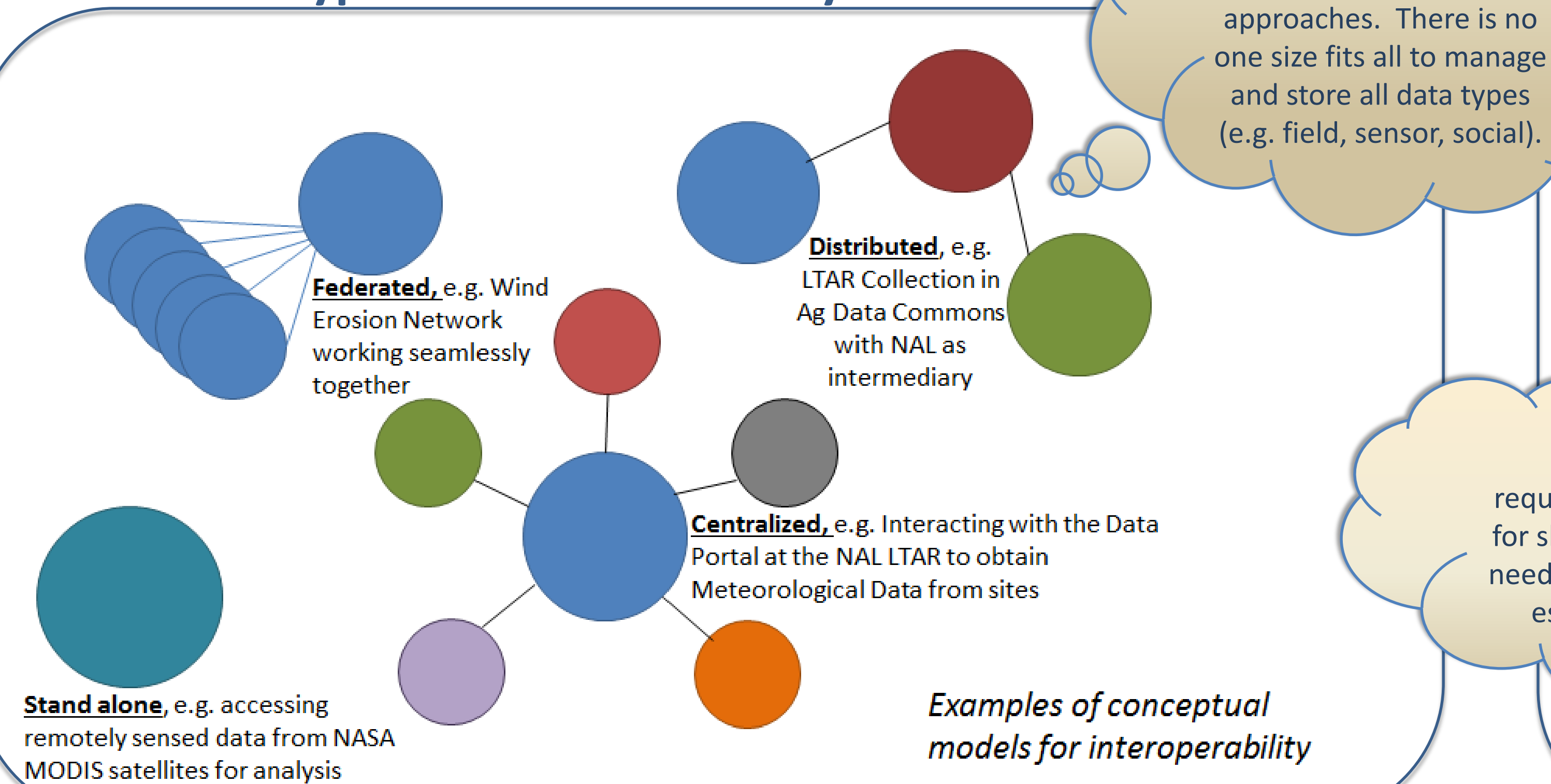
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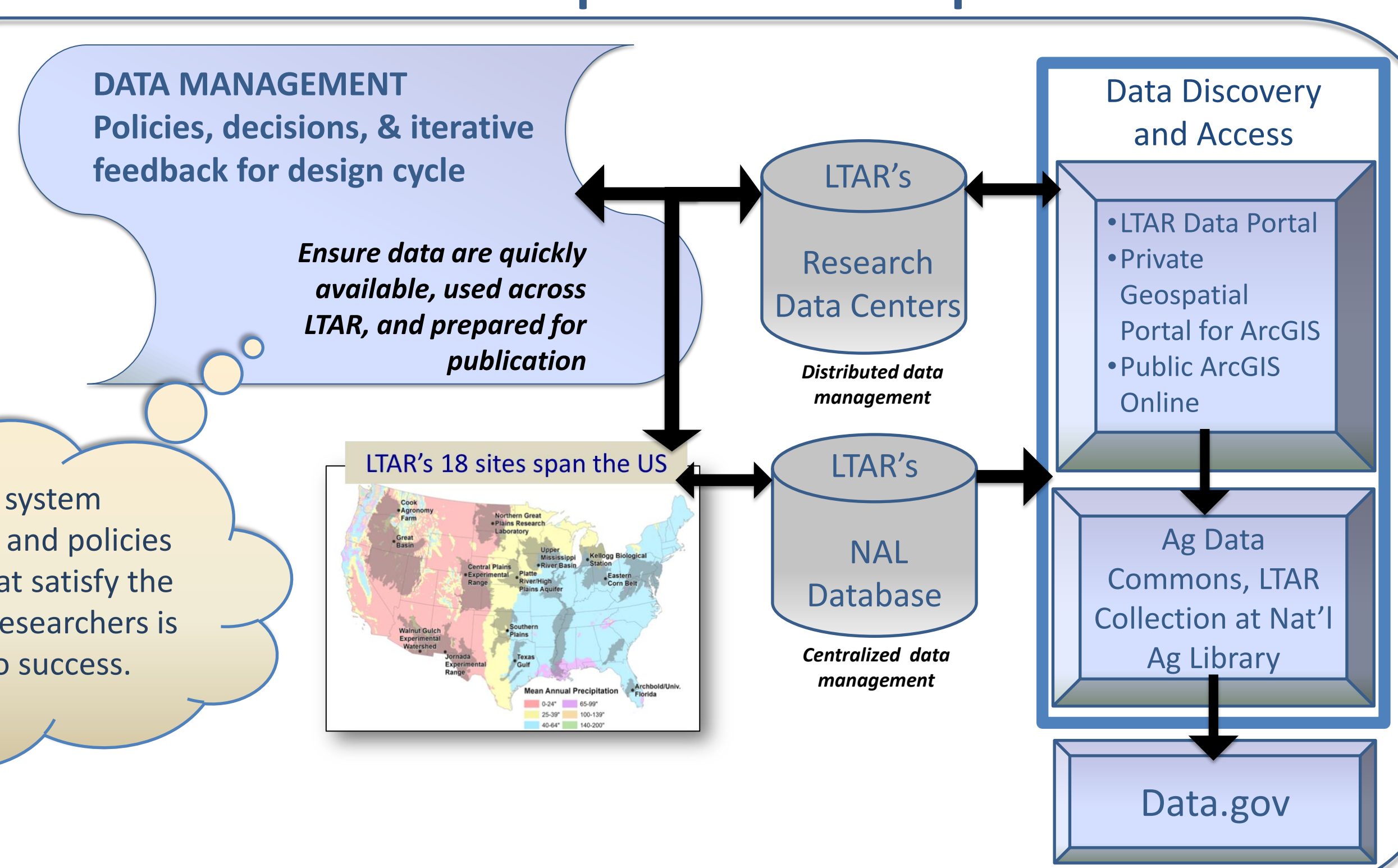
## Establishing formal working groups is necessary to define strategies for such a diffuse network to make decisions, create policies, and coordinate the many activities of the network



## Conceptualizing models of data interoperability for various types of data and DM systems



## Scaling up to the “Information Ecosystem”: Defining requirements and developing tools to ensure data are available across the Network and can be published for open access



## Lessons learned inform our next steps

- ✓ Embed data management within research network planning as early as possible
- ✓ Managing and sharing heterogeneous data types across a large research network is challenging, so communication of requirements for local & network systems is key
- ✓ Involve diverse expertise on working groups to ensure strategies and policies are relevant
- ✓ Get input from scientists to design useful features and functions for interoperable systems
- ✓ Cultivate partnerships with data repositories over time and document system and user requirements
- ✓ Expect design and development to be an iterative process
- ✓ Engage with other communities of practice to learn new approaches and leverage infrastructure (thank you CDI!)

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